

Common pregnancy conditions risk future diabetes

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Two common conditions in pregnancy may be risk factors for future diabetes according to a Canadian study of over one million women published in this week's *PLOS Medicine*.

The researchers, led by Denice Feig from the University of Toronto, Canada, found that pre-eclampsia (a condition in which affected pregnant women have high blood pressure, [fluid retention](#), and protein in their urine), and gestational hypertension ([high blood pressure](#) associated with [pregnancy](#)) could double the chance of being diagnosed with diabetes many years after pregnancy.

Furthermore, the authors also found that when combined with gestational diabetes (diabetes only associated with pregnancy, a known risk factor for later diabetes), [preeclampsia](#) or gestational hypertension were linked to a further rise in the rate of future diabetes over and above the 13-fold increase resulting from gestational diabetes alone.

These findings are important as they highlight possible new risk factors for diabetes, suggesting that clinicians should be aware of the need to screen for diabetes in women with a history of preeclampsia or gestational hypertension.

The authors reached these conclusions by using a comprehensive Canadian [health database](#) to identify all women delivering in an Ontario hospital between April 1994 and March 2008 who had preeclampsia, gestational hypertension, or gestational diabetes. They then recorded

from the Ontario Diabetes Database whether these women went on to develop diabetes in the period from 180 days after delivery until March 2011.

Over the study period 1,010,068 pregnant women were included in the analysis, of whom 22,933 had only preeclampsia, 27,605 had only gestational hypertension, and 30,852 had only gestational diabetes: 2,100 women had both gestational diabetes and gestational hypertension and 1,476 women had gestational diabetes and preeclampsia. Overall, 35,077 women developed diabetes (3.5%) in the follow-up period.

In their analysis, the authors found that the increased risk of future diabetes was 1.95 times higher in women with gestational hypertension alone, 2.08 times higher in women with preeclampsia alone, and 12.77 times higher in women with gestational diabetes. However, when combined with gestational diabetes, the risk jumped to 18.49 times higher for gestational hypertension and 15.75 times higher for preeclampsia.

The authors say: "In this large, population-based study, we found that the presence of either preeclampsia or gestational hypertension during pregnancy were strong predictors for the development of diabetes years following the pregnancy, and the presence of preeclampsia or gestational hypertension in a woman with a history of gestational diabetes, increased the risk of diabetes over and above that observed with gestational diabetes alone."

They continue: "These findings have important implications for maternal health, especially given the increase in obesity-related diseases."

The authors add: "A history of preeclampsia or gestational hypertension during pregnancy should alert clinicians to the need for preventative counseling and more vigilant screening for diabetes."

In an accompanying Perspective article, Thach Tran from the University of Adelaide in Australia (uninvolved in the research study) says: "Based upon this new study, women experiencing hypertensive pregnancy disorders with or without [gestational diabetes](#) should be considered as a population at high risk for subsequently developing diabetes."

Tran continues: "All [women](#) with a history of hypertensive disorders in pregnancy should thus be counselled about their potential increased risk of subsequent diabetes and the possible opportunity for screening as well as preventive interventions."

More information: Feig DS, Shah BR, Lipscombe LL, Wu CF, Ray JG, et al. (2013) Preeclampsia as a Risk Factor for Diabetes: A Population-Based Cohort Study. PLoS Med 10(4): e1001425.
[doi:10.1371/journal.pmed.1001425](https://doi.org/10.1371/journal.pmed.1001425)

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